

## REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Applicants gratefully acknowledge the indication that claims 1, 3, 5, 7 and 31-46 are allowed, and that claims 49 and 50 would be allowable if rewritten to overcome the rejections under Section 112, second paragraph.

In the Office Action of April 1, 2010, claims 47-51 were rejected under 35 U.S.C. § 112, second paragraph; and claims 47 and 51 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Orr (U.S. Patent No. 5,865,768) in view of Kawada et al. (JP 03089426A).

Applicants note that claim 48 is not included in the prior art rejection under Section 103, yet it is also not indicated as allowable if amended to overcome the rejection under Section 112. Pursuant to a telephone discussion with the Examiner, counsel understands that claim 48 is intended to be rejected on the same basis as claims 47 and 51. Nevertheless, written clarification as to the status of claim 48 is kindly requested in the next official action.

### **Section 112 Rejections**

Claims 47-51 stand rejected under Section 112, second paragraph, as being indefinite. The Examiner indicates that Claim 47, lines 5-6 reciting "a welded portion formed by the welding has a projection projecting in the outer peripheral direction" and lines 8-10 reciting "the welded portion does not extend farther radially outwardly than an enlarged proximal-most end portion of the first wire and does not extend farther radially outwardly than a distal-most end portion of the second wire" are

confusing. The Examiner contends that it is unclear how a welded portion can be considered a projection if the welded portion does not extend farther than either the first or second wire. .

As set forth above, claim 47 has been amended to recite that:

"said first wire and said second wire are joined to each other by welding at a weld joint so as to define a first enlarged proximal-most end portion of the first wire and a first enlarged distal-most end portion of the second wire;" and that:

"a projection formed by said welding and projecting in an outer peripheral direction on both axial sides of the weld joint, said projection defining a final enlarged proximal-most end portion of the first wire and a final enlarged distal-most end portion of the second wire ....; wherein the final enlarged proximal-most end portion of the first wire does not extend farther radially outwardly than said first enlarged proximal-most end portion of the first wire and the final enlarged distal-most end portion of the second wire does not extend farther radially outwardly than said first enlarged distal-most end portion of the second wire".

Claim 47 thus clarifies that the first and second wires being joined at the weld joint defines a first enlarged proximal-most end portion of the first wire and a first enlarged distal-most end portion of the second wire. The projection, however, may be formed by further welding/working after the initial welding such that the projection defines a final enlarged proximal-most end portion of the first wire and a final enlarged distal-most end portion of the second wire -- which do not extend farther radially outwardly than the first enlarged proximal-most end portion of the first wire and the first enlarged distal-most end portion of the second wire formed during the initial welding.

Referring to Paragraph [0091] of the published application (2004/0039309), Applicants describe how the size, i.e., radially outward extension, of the projection can be controlled by adjusting, for example, the applied voltage and the pressing force applied between the first wire and the second wire or by grinding the weld joint.

Applicants respectfully submit that the rejections under Section 112 have been obviated. If the Examiner requires any further clarification on this matter or believes an amendment to claim 47 would facilitate understanding of this feature, he is kindly invited to telephone the undersigned counsel for Applicants.

### **Section 103 Rejections**

The Official Action rejects Claims 47-51 under 35 U.S.C. §103(a) over U.S. Patent No. 5,865,768 to Orr in view of Japanese Patent Application Publication No. 03-089426 to Kawada et al. ("Kawada"). For at least the following reasons, this rejection is respectfully traversed.

Orr discloses a guide wire having a radiopaque portion 30 and a radiolucent portion 25 which the Official Action says corresponds to the claimed first and second wires, respectively. The Official Action states that Kawada discloses welding a first wire to a second wire and increasing the area of the weld by including a larger diameter section to improve weld strength. The Official Action takes the position that it would have been obvious to modify the connection of Orr's radiolucent portion 25 to the radiopaque portion 30 to include Kawada's "larger diameter weld". Applicants respectfully disagree with the Official Action's position.

First, one skilled in the art would not have looked to Kawada to modify any aspects of Orr's guide wire. Orr's guide wire is used in percutaneous

transluminal coronary angioplasty (PTCA) applications to reduce arterial build-up of cholesterol fats or atherosclerotic plaque (see lines 9-11 of column 1 of Orr). That is, Orr's guide wire is configured to be inserted into a coronary artery of a human body to reach a stenosis as discussed in lines 17-19 of column 1 of Orr's disclosure.

On the other hand, Kawada discloses butt-welding a Dumet wire 13 to lead wires 2 and 3 via an end section 12 as shown in Fig. 1 of Kawada and discussed in Kawada's Abstract. A Dumet wire is a component in a glass-to-metal vacuum seal. Glass-to-metal vacuum seals are not pertinent to guide wires used for insertion into a body lumen of an organism. Accordingly, Kawada's Dumet wire 13 is not relevant to Orr's guide wire. One of ordinary skill in the art of guide wires would not have looked to Kawada's disclosure for guidance in modifying the radiolucent portion 25 of Orr's guide wire.

Furthermore, Kawada's Dumet wire 13 has a smaller diameter than each of the lead wires 2 and 3 as clearly shown in Fig. 1 of Kawada. Accordingly, in order to improve the strength of the weld between the smaller Dumet wire 13 and the larger lead wires 2 and 3, Kawada discloses that the end sections of the Dumet wire 13 can be made larger by pressing and crushing the ends so as to form larger diameter end sections 12. In essence, the larger diameter end sections 12 compensate for the small diameter of the Dumet wire 13 at the connection with the lead wires 2 and 3. In this way, the "larger diameter" end sections 12 improve the weld strength between the Dumet wire 13 and the lead wires 2 and 3.

In contrast, the diameter of Orr's radiolucent portion 25 (said to correspond to the claimed second wire) is the same as the diameter of the proximal end of the joint 40 connecting the radiolucent portion 25 and the radiopaque portion 30 as shown in

Fig. 1 of Orr. Thus, there is no need to provide a "larger diameter" end section between the radiolucent portion 25 and the joint 40 to compensate for any difference in diameter between the radiolucent portion 25 and the proximal end of the joint 40. That is, there is no reason why one of ordinary skill in the art would have increased the end section diameter of either portion in Orr's weld by including Kawada's "larger diameter" end sections 12 as stated by the Official Action.

Moreover, even if the references were combined as the Examiner suggests, one still would not obtain the claimed invention. Claim 47 recites that said first wire and said second wire are joined to each other by welding at a weld joint so as to define a first enlarged proximal-most end portion of the first wire and a first enlarged distal-most end portion of the second wire. Claim 47 further recites a projection formed by said welding and projecting in an outer peripheral direction on both axial sides of the weld joint. The primary reference relied upon by the Examiner, Orr, discloses a guide wire but does not have a projection formed by the welding of two wires. The secondary reference, Kawada, also does not disclose a projection formed by the welding of two wires. That is, Kawada does not disclose joining together two wires "by welding ...so as to define a first enlarged proximal-most end portion... and a first enlarged distal-most end portion....". Rather, Kawada discloses first pressing and crushing the ends of piece 13 to form enlarged end sections 12, and thereafter welding the enlarged end sections 12 to the lead wires 2 and 3. Accordingly, Claim 47 is not rendered obvious by the cited prior art.

Further, claim 47 recites that the projection defines a final enlarged proximal-most end portion of the first wire and a final enlarged distal-most end portion of the second wire forming a smooth joining surface therebetween. As clearly shown in the

drawings of the instant application, the projection has a smooth surface even though it is formed by two different end portions. This smooth joining surface is not disclosed in either Orr or Kawada.

Still further, claim 47 recites that "said first wire and said second wire are joined to each other by welding at a weld joint so as to define a first enlarged proximal-most end portion of the first wire and a first enlarged distal-most end portion of the second wire;" and that "a projection formed by said welding and projecting in an outer peripheral direction on both axial sides of the weld joint, said projection defining a final enlarged proximal-most end portion of the first wire and a final enlarged distal-most end portion of the second wire ....; wherein the final enlarged proximal-most end portion of the first wire does not extend farther radially outwardly than said first enlarged proximal-most end portion of the first wire and the final enlarged distal-most end portion of the second wire does not extend farther radially outwardly than said first enlarged distal-most end portion of the second wire". Claim 47 thus indicates, and as explained above relative to the rejection under Section 112, the projection may have a "height" different from the original size of the weld formed when joining the wires. Neither reference relied upon by the Examiner remotely suggests such a projection.

Accordingly, the combination of Orr and Kawada fails to disclose, and would not have rendered obvious, a guide wire having the combination of features recited in independent Claim 47. Thus, independent Claim 47 is patentable over Orr and Kawada.

Early and favorable action concerning this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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